

ABSTRACT OF THE DISCLOSURE

A process for the removal of arsine (AsH_3) from a hydrocarbon stream, having an atmospheric boiling point lower than about 0°C , by contacting the hydrocarbon stream with an adsorbent that contains elemental sulphur deposited on a support material. The amount of sulfur is in the range between 5 and 25 wt. % relative to the total amount of sulfur and support material. In addition, to arsine, mercury may also be removed from the hydrocarbon stream.